



**SPAWAR**  
**Systems Center**  
**San Diego**

TECHNICAL DOCUMENT 3066  
February 1999

## **Accomplishment Report for Fiscal Year 1998**

SSC San Diego C<sup>4</sup>I Programs Office, Philadelphia

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distribution is unlimited.

SSC San Diego

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SSC San Diego  
San Diego, CA 92152-5001

**SSC SAN DIEGO**  
**San Diego, California 92152-5001**

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**H. A. Williams, CAPT, USN**  
**Commanding Officer**

**R. C. Kolb**  
**Executive Director**

**ADMINISTRATIVE INFORMATION**

The work detailed in this report was performed for the Space and Naval Warfare Systems Command, the Naval Air Systems Command, and the Office of Naval Intelligence by the SSC San Diego C<sup>4</sup>I Programs Office, Philadelphia.

Released under the authority of  
F. R. Wahler, Head  
SSC San Diego C<sup>4</sup>I, Programs Office, Philadelphia

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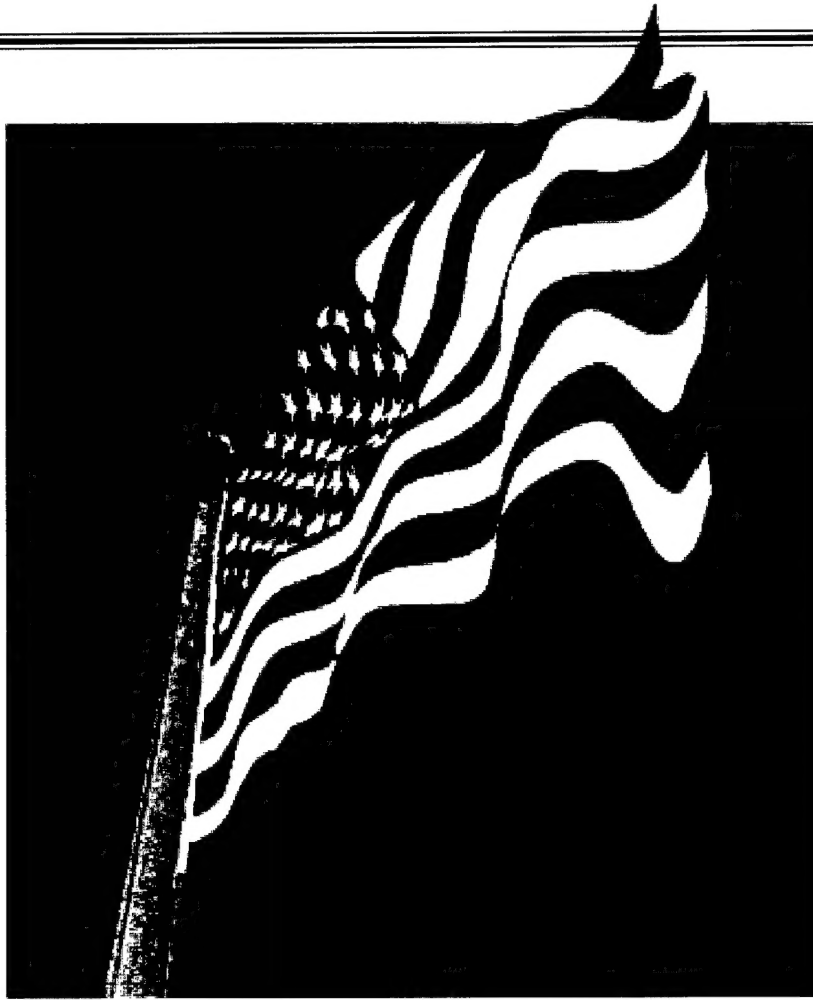
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## INTRODUCTION

SSC San Diego C4I Programs Office Philadelphia was established in October 1993 and was formerly designated the Space and Naval Warfare Systems Center, San Diego, Detachment Philadelphia (SPAWARSYSCEN SAN DIEGO DET PHILA). The current name resulted from an internal SSC reorganization and became effective 25 October 1998. See Figures 1 and 2 for a map of the location and a diagram of the facilities.

SSC San Diego C4I Programs Office Philadelphia is responsible for a program of development, in-service engineering, procurement, installation support, configuration control and integrated logistics support for mission planning systems, electronic photographic processing systems and imagery archiving systems afloat and ashore worldwide. During fiscal year 1998, SSC San Diego C4I Programs Office Philadelphia provided technical support to:

- ◆ Commander, Naval Air Systems Command
  - ❖ Program Executive Officer, Cruise Missiles Project and Unmanned Aerial Vehicles Joint Project Office (PEO(CU))
    - ◆ Command and Control Systems Program Office (PMA-281)
  - ❖ Program Executive Officer, Tactical Aircraft Programs Office (PEO-(T))
    - ◆ Tactical Aircraft Mission Planning System Program Office (PMA-233)
    - ◆ F-14 Program Office (PMA-241)
- ◆ Naval Electronic Logistics Office (NELO)
- ◆ Commander, Naval Sea Systems Command
  - ❖ Aircraft Carrier Program Office (PMS-312)
  - ❖ Amphibious Warfare Program Office (PMS-377)
- ◆ National Imagery and Mapping Agency (NIMA/SDS)
- ◆ Joint, service and allied commands and program offices

Directed by a civilian manager, SSC San Diego C4I Programs Office Philadelphia has a staff of forty-nine employees from many disciplines and skills, including interdisciplinary engineers, computer specialists, electronics technicians, logisticians, and management support personnel. Customer satisfaction based upon Total Quality Management (TQM) and the Quality Process is SSC San Diego C4I Programs Office Philadelphia's principal goal and criterion of achievement. SSC San Diego C4I Programs Office Philadelphia's efforts are supplemented by one hundred and forty-six contractor engineering and technical support personnel.

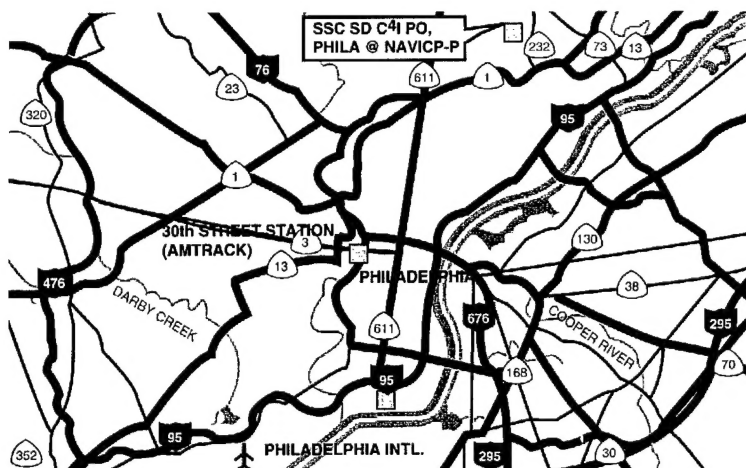
SSC San Diego C4I Programs Office Philadelphia's internal structure is shown in its Organization Chart, Figure 3. Principles of Operation, Figure 4, graphically illustrates SSC San Diego C4I Programs Office Philadelphia's commitment to customer satisfaction.

## LOCATION AND FACILITIES

## SSC San Diego C4I Programs Office Philadelphia

**Location:**

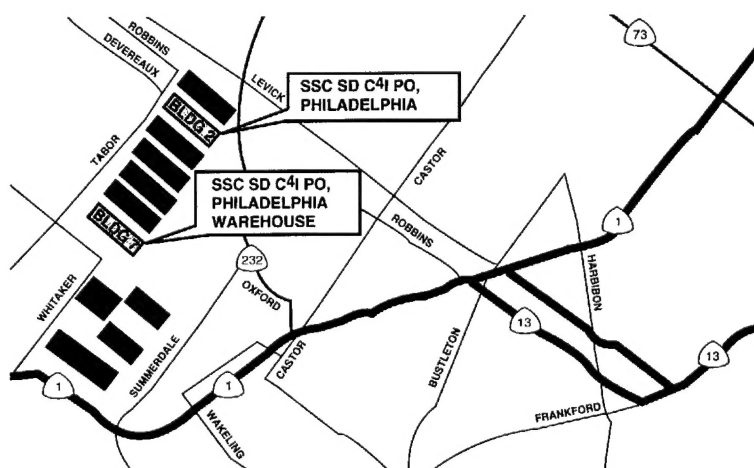
SSC San Diego C4I Programs Office  
Philadelphia is located in Buildings 2  
and 7, Naval Inventory Control Point  
compound, 700 Robbins Avenue,  
Philadelphia, Pennsylvania.



**Figure 1. Philadelphia area**

**Facilities:**

In Building 2, SSC San Diego C4I Programs Office Philadelphia occupies 19,400 square feet of administrative and fleet support laboratory spaces. The fleet support laboratory is comprised of a complex of fleet configured and supported tactical mission planning and imagery support systems; technical analysis and help desks; two systems support training areas; a functional mission planning systems Local Area Network (LAN)



**Figure 2. Naval Inventory Control Point buildings**

configuration; and two fully accredited security areas containing a Sensitive Compartmented Information Facility (SCIF), and a Special Access Program (SAP) room. There are also administrative, engineering and technical support areas. Utilizing an additional 20,900 square feet, SSC San Diego C4I Programs Office Philadelphia has located its warehouse operations in Building 7. This area encompasses a 1600 square foot systems integration facility.

In January 1999, SSC San Diego C4I Programs Office Philadelphia will develop an additional 13,333 square feet in Building 2 to permit expansion of the laboratory and administrative spaces.

## VISITS

*Fred Wahler welcomes Sandra R. Leggieri, Vice Commander, Naval Inventory Control Point for a tour and briefing of the SSC San Diego C4I Programs Office Philadelphia.*



*SSC San Diego C4I Programs Office Philadelphia hosted the Initial Division 42 Management Off-site meeting. The two-day event included technical briefings, demonstrations and tours.*



*Fred Wahler and Rod Smith, Head, Command & Control Department*



*Dr. R. Jaffee, Head, Command & Intelligence Systems Division, Vivian DiCristofaro, and Dennis Rozanski*

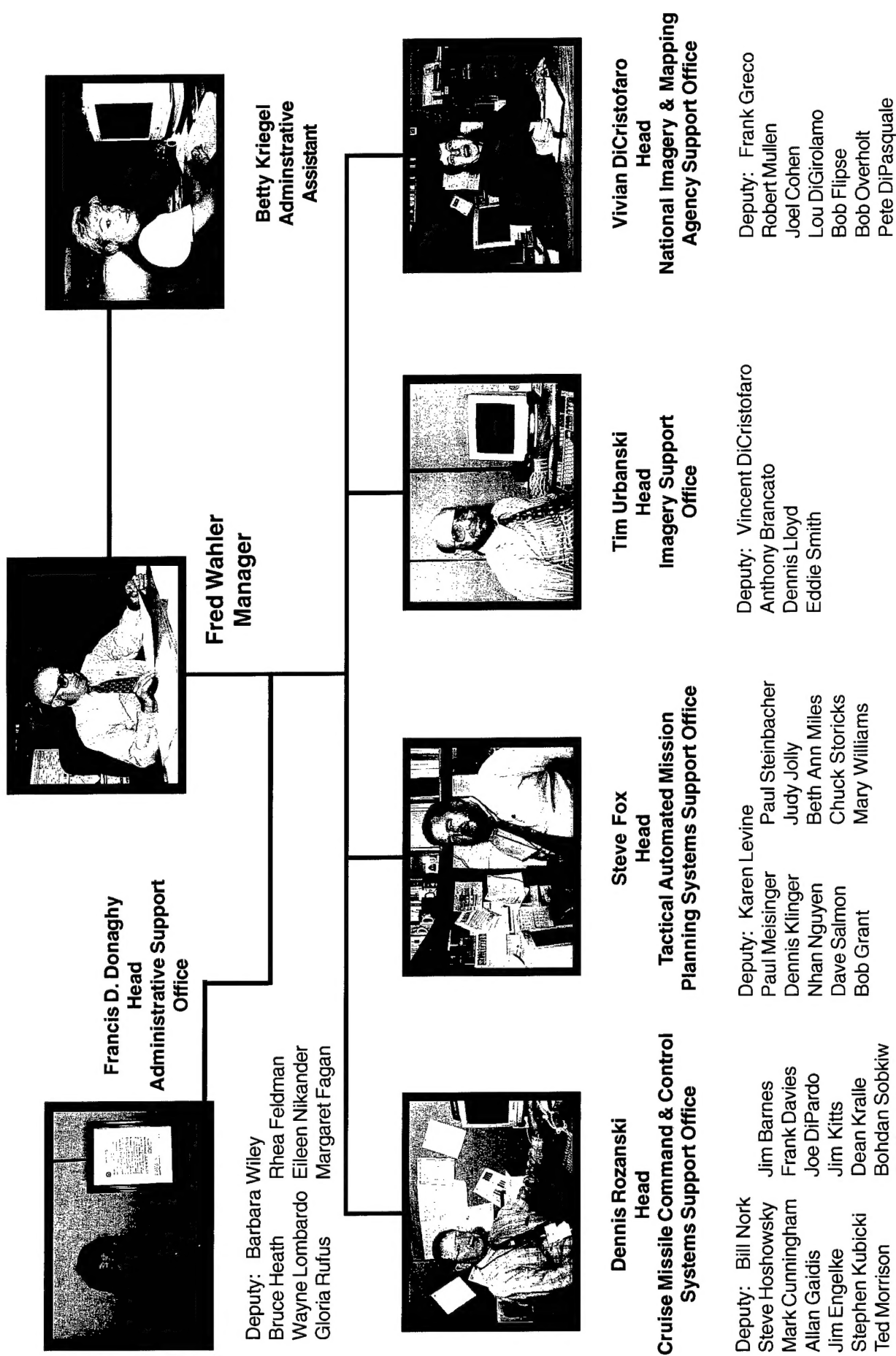


*Bill Bonwit, Steve Fox, and Vivian DiCristofaro*



*Rod Smith, Linda Modica, Sue Patterson, and John Chevrier*

# SSC San Diego C4I Programs Office Philadelphia



**Figure 3. Organizational Chart**



**Figure 4. Principles of Operation for SSC San Diego  
C4I Programs Office Philadelphia**

## AWARDS AND RECOGNITION



*Tim Urbanski receives his Navy Meritorious Civilian Service award for leading development, installation and support of digital imagery products from Captain H.A. Williams, U.S.N., Commanding Officer, and Dr. R.C. Kolb, Executive Director, SSC San Diego.*

*Gloria Rufus receives her Exemplary Achievement Award for financial analyst services from Captain H.A. Williams, U.S.N., Commanding Officer, and Dr. R.C. Kolb, Executive Director, SSC San Diego.*





## AWARDS AND RECOGNITION



*Dr. R. Jaffee presents Vivian DiCristofaro with a Letter of Appreciation for superior support and excellence throughout numerous installations in fielding the IPL version 1.0. Team members from left to right are Joel Cohen, Bob Flipse, Robert Mullen, Robert Overholt, Margaret Fagan, and Frank Greco. Bill Bonwit and Fred Wahler observe. Missing from photo are Lou DiGirolamo and Eileen Nikander.*



*Dr. R. Jaffee, Rod Smith and Fred Wahler present the IPL Program Team with a Team Award for superior support and excellence in fielding the IPL version 1.0. Team members from left to right are Frank Greco, Robert Mullen, Lou DiGirolamo, Vivian DiCristofaro, Joel Cohen, Margaret Fagan, Robert Overholt, and Eileen Nikander. Missing from photo is Bob Flipse.*

## AWARDS AND RECOGNITION



*Tim Urbanski and Dennis Lloyd receive their Letter of Appreciation for support to the 1998 Worldwide PAO Workshop from Dr. R. Jaffee as Fred Wahler and Bill Bonwit observe.*



*Bill Nork receives his 25 year Career Service Award from Rod Smith as Dr. R. Jaffee observes.*

## AWARDS AND RECOGNITION

### Career Service Awards

*Joe DiPardo receives his 15 year Career Service Award from Rod Smith as Dr. R. Jaffee observes.*



*Allan Gaidis receives his 10 year Career Service Award from Rod Smith as Dr. R. Jaffee observes.*



## BRING OUR CHILDREN TO WORK DAY

On April 23, 1998, the Naval Inventory Control Point hosted "Bring Our Children to Work Day." Ranging in age from 9 to 15, the children accompanied their parents or guardians to experience the realities of the work world and gain insight on how various careers contribute to the workforce. In the photo at right, they attended a briefing by NAVICP personnel explaining different Federal career paths.



From left to right: Ashley Mason, Lauren DiCristofaro, Aaron Bachman, Karen Wiley, Timmy Kriegel, Shawn Williams, Nicole Giberson, Robert Green Jr., Patrick Giberson, Ian Bachman (front), Christie Cunningham, and Keith Wagner.

In the photo below, the children listen as their parents describe their own jobs at SSC San Diego C4I Programs Office.



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## ADMINISTRATIVE SUPPORT OFFICE STAFF



*Barbara Wiley, Deputy, Program Analyst*



*Bruce Heath, Security*



*Wayne Lombardo, Facilities and Safety*



*Gloria Rufus, Budget*



*Rhea Feldman, Aquisition Specialist*



*Eileen Nikander, Aquisition Specialist*



*Margaret Fagan, Program Analyst*

## ADMINISTRATIVE AND ACQUISITION SUPPORT

In FY98, SSC San Diego C4I Programs Office Philadelphia's administrative, acquisition and facility support functions kept pace with the increased Total Obligating Authority (TOA) that was \$57.8 million with 145 fiscal Customer Orders defined. Stub requisitions increased by nine percent and the use of International Merchant Purchase Authorization Card (IMPAC) credit cards rose by sixty-two percent. Significant usage of DoD and Navy-wide contracts was employed to satisfy acquisition requirements. Invoiced items certified for payment increased by fifteen percent.

The intensified responsiveness to client requirements is reflected by sizable increases in the number of travel orders issued and telecommunications message traffic processed.

Warehouse operations expanded in scope and physical size commensurate with the increased business base. Direct transfers of material and use of the DLA FedEx Premium Logistics Support program were expanded to expedite responsiveness to customer needs and operating schedules. A process flow study was undertaken in support of product improvement and workload efficacy.

SSC San Diego C4I Programs Office Philadelphia's administrative workload is catalogued in the table below.

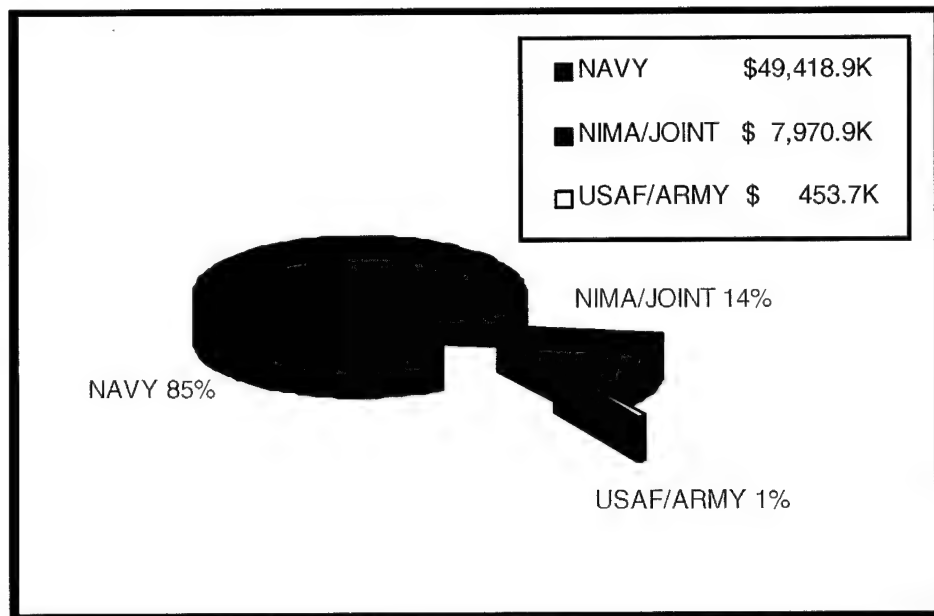
**Table 1. Administrative Workload FY98**

Purchase requisitions	659
Requisition stubs	3426
BankCard transactions	959
MILSTRIPS	233
FedEx bills of lading (non-DLA)	1808
Prompt payment invoice certifications	718
Number of items on Invoices certified	3102
Travel orders	965
Correspondence	58
Training documents	131
Messages	2599
Shipping documents (DD1149)	1489
Classified documents and other media	1995
• Held	681
• Destroyed	46
• Transmitted	1268

**SSC SAN DIEGO  
C4I PROGRAMS OFFICE  
PHILADELPHIA**

**FY98 FUNDING  
BY AGENCY**

**TOA: \$57,843,500**

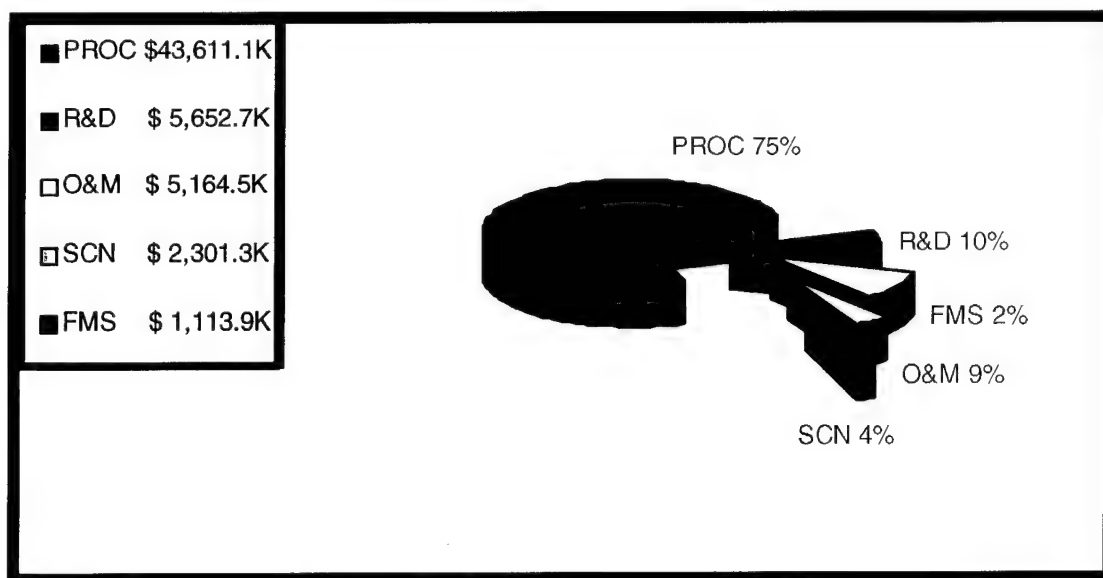


**Figure 5.**

**SSC SAN DIEGO  
C4I PROGRAMS OFFICE  
PHILADELPHIA**

**FY98 FUNDING  
BY APPROPRIATION**

**TOA: \$57,843,500**



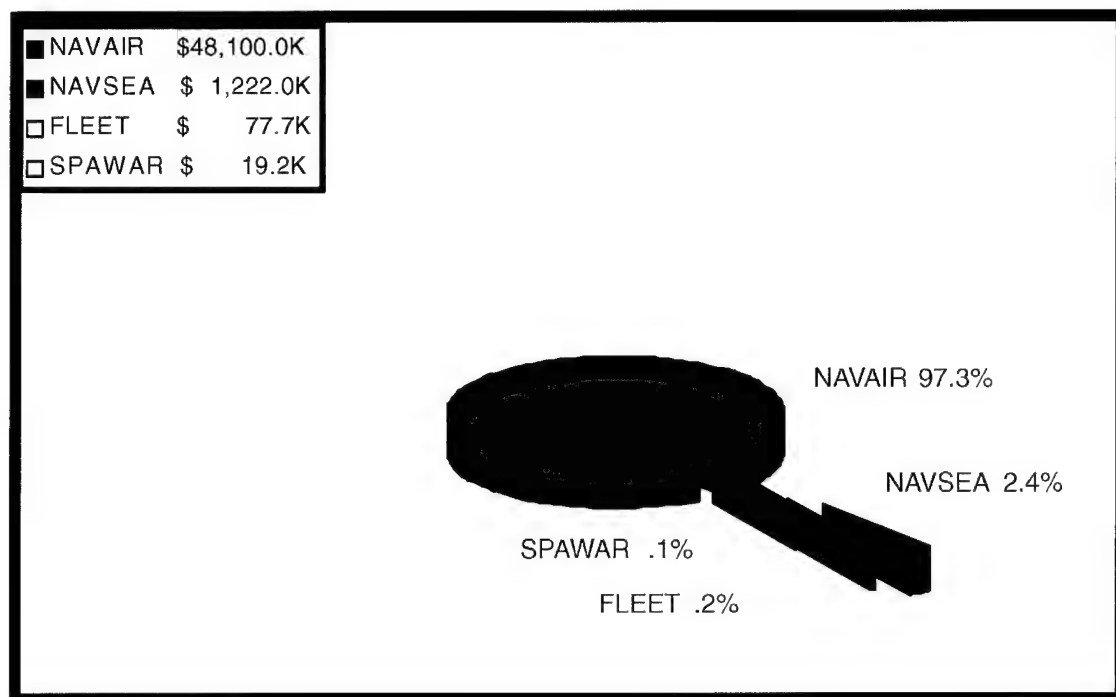
**Figure 6.**



**SSC SAN DIEGO  
C4I PROGRAMS OFFICE  
PHILADELPHIA**

**FY98 FUNDING  
BY NAVY CLAIMANT**

**TOTAL: \$49,418,900**



**Figure 7.**

## CONTRACTING

SSC San Diego C4I Programs Office Philadelphia's Total Obligating Authority (TOA) increased by nearly two percent in FY98 to \$57.8 million. Of the total, over \$48 million was used in the acquisition of goods and services in support of assigned projects. The primary contracting agency utilized for these procurements was the Fleet and Industrial Supply Center (FISC), Norfolk Detachment Philadelphia. Nearly sixty percent of the procurements through FISC were acquired competitively. Significant activity under extant Basic Purchasing Agreement (BPA) and Indefinite Delivery/Indefinite Quantity (IDIQ) contracts was conducted with the Naval Inventory Control Point (NAVICP), Mechanicsburg, the Naval Air Warfare Center - Aircraft Division (NAWC-AD), Patuxent River, and the Air Force Electronic Systems Command (ESC).

Military Standard Requisitioning and Issue Procedures (MILSTRIP) procurements quintupled to \$1.7 million, due to the increased ability to order major equipment and components through the Defense Industrial Support Center (DISC) stock system. Government IMPAC credit card usage doubled, although dollar value decreased in part as a result of increased MILSTRIP requisitions. The reissue of cards and revised statement reconciliation procedures occurred without significant negative impact.

As the Contracting Officer's Representative (COR), SSC San Diego C4I Programs Office Philadelphia's personnel provided the trained and experienced administrative and technical assistance for three major multi-year engineering and technical contracts supporting its projects. Options on all three contracts were exercised during the fiscal year. At the close of FY98, a fourth multi-year contract was awarded under a competitive procurement process to provide engineering, fabrication and installation services.

The current CORs supporting these contracts are:  
Rhea Feldman, Technical and facility support services



Dean Kralle, Engineering and repair services



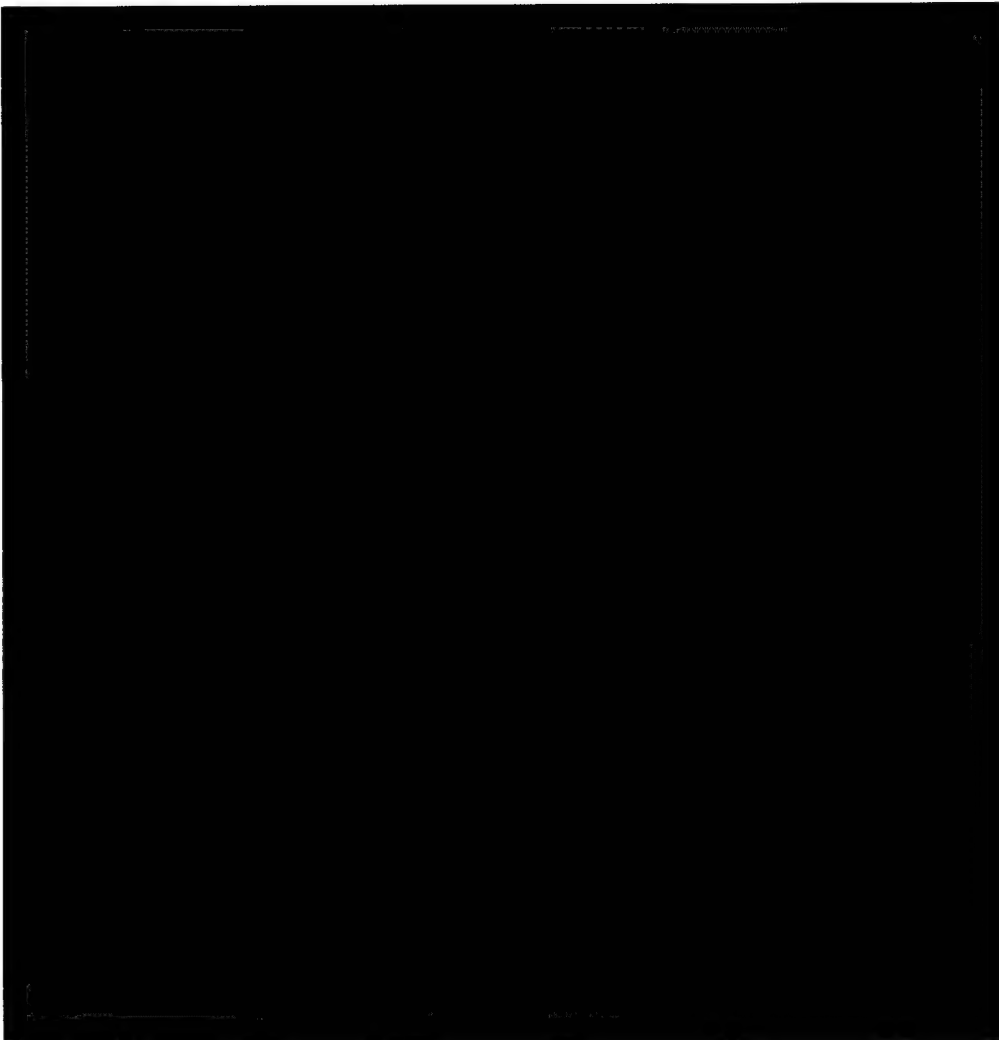
Lou DiGirolamo, Engineering and technical services



Eileen Nikander, Engineering, fabrication and installation services.



## **TECHNICAL ACCOMPLISHMENTS 1998**



## ENGINEERING & TECHNICAL SUPPORT TO PMA-281 FOR AFLOAT PLANNING SYSTEM (APS)

### Role:

- **Technical Services**
- **Installation Planning**
- **Testing Support**
- **Integrated Logistics Support**



The Afloat Planning System (APS) is comprised of the computer system and applications software items, which provide for the planning, distribution and employment support of the Tomahawk Land Attack Missile (TLAM). APS will provide each Battle Force/Battle Group (BF/BG) Commander with the same functional capability as the shore-based Cruise Missile Support Activity (CMSA) for planning conventional TLAM missions. The APS can facilitate a reduction in the dependence on non-organic assets or long-haul communications for management information system data during crisis surge and/or hostile activity.

The APS efforts for FY98 included coordinating and participating in the installation of hardware and software and testing of the APS on the following platforms:

*USS Kitty Hawk (CV 63)*  
*USS Constellation (CV 64)*  
*USS Enterprise (CVN 65)*  
*USS Dwight D. Eisenhower (CVN 69)*  
*USS Carl Vinson (CVN 70)*  
*USS Theodore Roosevelt (CVN 71)*  
*USS Abraham Lincoln (CVN 72).*



*Bill Nork, Deputy  
Cruise Missile Command & Control Systems  
Support Office*



*Steve Hoshowsky, Engineering*

SSC San Diego C4I Programs Office Philadelphia installed two TAC-4 Mission Distribution System (MDS) workstations and two TAC-4 Tomahawk Planning System - Afloat (TPSA) workstations in the new building addition at the Naval Marine Intelligence Training Center (NMITC), Dam Neck, Virginia, for use in the TPSA Mission Planners Course.

SSC San Diego C4I Programs Office Philadelphia coordinated the development of the Ships Installation Drawing (SID) packages by the Expanded Planning Yards including conducting ship checks for the installation of APS on the *USS Constellation* (CV 64) and *USS John F. Kennedy* (CV 67).

All TAC-4 hardware installed in the above platforms was architected, procured, assembled, and integration tested by SSC San Diego C4I Programs Office Philadelphia.

**Point of Contact:**

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SSC San Diego C4I Programs Office Philadelphia



*Allan Gaidis, Installation*



*Jim Steib, Installation*

## ENGINEERING & TECHNICAL SUPPORT TO PMA-281 FOR JOINT SERVICE IMAGERY PROCESSING SYSTEM - NAVY (JSIPS-N)

**Role:**

- ➔ **Technical Services**
- ➔ **Installation Planning**
- ➔ **Testing Support**
- ➔ **Integrated Logistics Support**



The Joint Service Imagery Processing System - Navy (JSIPS-N) is a shipboard deployable, tactical digital imagery system with the capability to receive, process, store, exploit, and disseminate imagery from a variety of sources. JSIPS-N will provide the Battle Group/Battle Force (BG/BF) Commander with enhanced intelligence support via digital processing technology and linkage of imagery with imagery support data. The JSIPS-N design is predicated upon functional allocations to, and interfaces among, existing Navy systems that are presently being designed to perform functions other than JSIPS-N. In so doing, the Navy's approach to JSIPS-N maximizes the existing (or planned) organic shipboard information management systems by adding new functions to those systems.

The JSIPS-N effort for FY98 included coordinating and participating in the installation of hardware and software and testing of the JSIPS-N on board the following platforms and locations:

NSAWC Fallon  
NMITC  
*USS Carl Vinson* (CVN 70)  
*USS Coronado* (AGF 11)  
*USS Enterprise* (CVN 65)  
*USS Theodore Roosevelt* (CVN 71)  
*USS Kitty Hawk* (CV 63)  
*USS John F. Kennedy* (CV 67)  
*USS Constellation* (CV 64)  
*USS Essex* (LHD 2)  
*USS Kearsarge* (LHD 3)  
*USS Boxer* (LHD 4)  
*USS Nassau* (LHA 4)  
CMSALANT  
CMSAPAC  
WPC

In addition, SSC San Diego C4I Programs Office Philadelphia participated in the following JSIPS-N development efforts:

- Imagery Exploitation Support System (IESS)
- National Input Segment Dissemination Element (NIS (DE))
- Tactical Input Segment (TIS)
- JSIPS-N Concentrator Architecture (JCA)
- PTW to JMCIS Interface
- Image Product Library (IPL) Afloat
- Strike Planning Archive/Precision Targeting Workstation (SPA/PTW)
- Color Printer Studies
- JSIPS-N/JMCIS (IT-21) LAN Interface Architecture

SSC San Diego C4I Programs Office Philadelphia was also instrumental in integrating and installing Sun Ultra Sparc based IPL Navy "LITE" System on board *USS Nassau* (LHA 4). This installation was accomplished in a compressed timeframe to support Joint Warfare Interoperability Demonstration, JWID 1998.

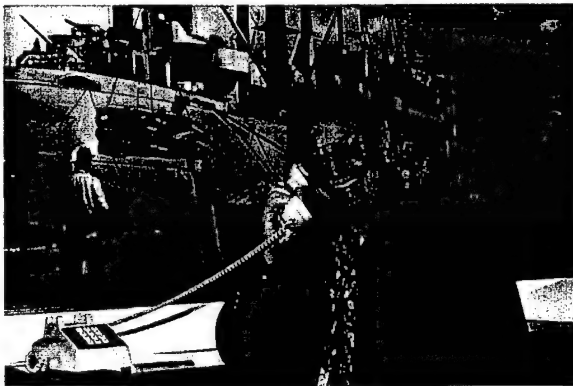
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SSC San Diego C4I Programs Office Philadelphia



*Dennis Rozanski, Head*



*Mark Cunningham, Engineering*



*Ed Zantek, Installation*

## CVN 76 CVIC CONFIGURATION DESIGN

### Role:

- ➔ **Compilation and Analysis of System Data**
- ➔ **Space Utilization and Design**
- ➔ **Installation Planning Support**

SSC San Diego C4I Programs Office Philadelphia was tasked to develop and maintain the Carrier Intelligence Center (CVIC) Reconfiguration Plan for CVN-76 new construction and to provide planning support for the *USS Nimitz* (CVN-68) and the *USS Harry S. Truman* (CVN-75).

SSC San Diego C4I Programs Office Philadelphia has compiled parametric data lists for existing and future mission planning systems, information processing systems and image processing systems that are located in CVIC. These lists, which contain shipboard service requirements (power, air conditioning, etc.), are used to develop plans for the near term transition of existing systems to new equipment, as well as for future systems installations.

In FY98, SSC San Diego C4I Programs Office Philadelphia has continued to provide planning support to PMA-281 and the Design Center for the *USS Nimitz* (CVN-68), the *USS Harry S. Truman* (CVN-75) and the *Ronald Reagan* (CVN-76). With all the new systems coming on board, SSC San Diego C4I Programs Office Philadelphia personnel have been working in conjunction with COMNAVAIRLANT and the planning center to develop a more functional Aircraft Carrier Intelligence Center (CVIC). SSC San Diego C4I Programs Office Philadelphia provided support at installation review meetings for CVIC Reconfiguration. We continued to support the Reconfiguration Execution Plan for the *USS Nimitz* (CVN-68), and the *Ronald Reagan* (CVN-76).

### Point of Contact:

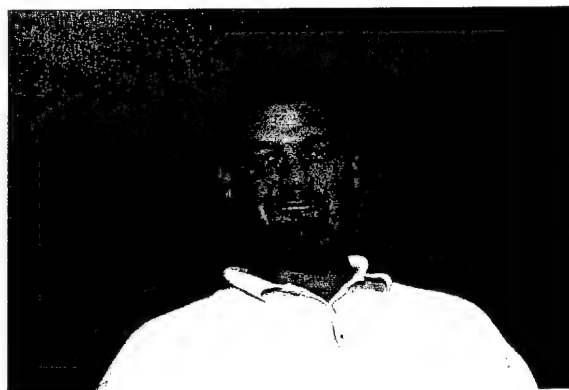
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SSC San Diego C4I Programs Office Philadelphia



*Allan Gaidis, Installation*



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## CARRIER INTELLIGENCE CENTER (CVIC) RECONFIGURATION

**Role:**

- ➔ **Compilation and Analysis of System Data**
- ➔ **Space Utilization and Design**
- ➔ **Installation Planning Support**

SSC San Diego C4I Programs Office Philadelphia was tasked to provide engineering and technical support in the development of the reconfiguration of the existing CVIC's to support the numerous ongoing and developing C4I systems and establish a requirement for a master plan to coordinate these installations through the year 2010. Tasking is from the Naval Air Systems Command, Program Executive Officer, Cruise Missile Project and Unmanned Aerial Vehicles Joint Project (PEO(CU)).

SSC San Diego C4I Programs Office Philadelphia produces and up-dates installation guides for all the systems under its cognizance. These installation guides contain the system installation control drawings (ICD) and parametric data required to prepare ships installation drawings (SID) which are required to install equipment on a ship. The information from these installation guides and collected data from other systems sharing space in CVIC is used to plan for the orderly addition of new equipment and the update of existing systems.

During FY98, SSC San Diego C4I Programs Office Philadelphia continued to support this effort by providing technical assistance, participating in design reviews and other technical meetings, producing and updating equipment arrangement drawings, and serving as liaison with several Program Offices in all of the Systems Commands. To date, CVIC reconfiguration guidance plans have been produced for the *USS Constellation* (CV 64), *USS Carl Vinson* (CVN 70), *USS Theodore Roosevelt* (CVN 71), *USS Abraham Lincoln* (CVN 72), *USS George Washington* (CVN 73), *USS John C. Stennis* (CVN 74), *USS Dwight D. Eisenhower* (CVN 69), *USS Enterprise* (CVN 65), *USS John F. Kennedy* (CV 67) and the *USS Kitty Hawk* (CV 63).

**Point of Contact:**

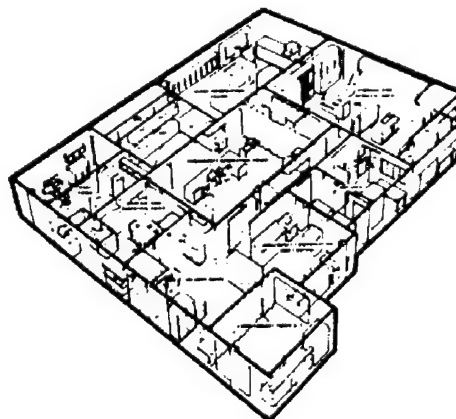
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SSC San Diego C4I Programs Office Philadelphia



## MISSION DISTRIBUTION SYSTEM (MDS)

### Role:

- ➔ **Hardware Engineering and Integration**
- ➔ **Installation Planning, Distribution and On-Site Implementation**
- ➔ **Hardware and Software Training**
- ➔ **System Support**
- ➔ **Integrated Logistics Support**
- ➔ **Continuous Trouble Desk Support**



The Mission Distribution System (MDS) is designed to aid the Battle Force/Battle Group (BF/BG) Strike Warfare decision makers by satisfying the tactical requirement of displaying the TOMAHAWK Land Attack Missile (TLAM) inventory of approved PrePlanned Missions (PPMs) and fleet missile inventory levels. MDS can receive and automatically update its Master Mission Library (MML) database while providing search, sort and display capabilities of the TLAM Mission Folder Data for task force strike analysis and retransmission of a Mission Data Update(s) (MDU) to subordinate echelons. In its enhanced role, MDS can allow planners to redefine mission data packages before transmission to other MDS sites or to sites with Advanced TOMAHAWK Weapons Control System (ATWCS) launch capabilities.

In FY98, SSC San Diego C4I Programs Office Philadelphia representatives supported MDS versions 3.0.8.2 and 3.2.3.2.a. SSC San Diego C4I Programs Office Philadelphia responsibilities included support of developmental testing, site surveys, hardware and software installations, site deactivations, and development of both informal and formal training packages. On-site informal training was also provided to MDS sites (ashore and afloat) during the past year while formal classroom courses were taught at the Naval and Marine Corps Intelligence Training Center (NMITC), Dam Neck, Virginia; Tactical Training Group, Atlantic (TACTRAGRULANT), Dam Neck, Virginia; and Tactical Training Group Pacific (TACTRAGRUPAC), San Diego, California.

SSC San Diego C4I Programs Office Philadelphia's personnel integrated, shipped, and installed MDS configured TAC-3s and TAC-4s to various sites in support of communications net testing, MDS version 3.X and 4.X system development, and scheduled fleet installations. In the course of installing new MDS sites and in support of systems already installed, SSC San Diego C4I Programs Office Philadelphia's personnel integrated, modified, installed and/or made operationally compatible various peripheral hardware(s) including: Generic Front-end Communications Processors (GFCP), upgrade scanners, LaserJet III and IV printers of multiple configurations, Secure Data Transfer (SDX) systems, Secure Telephone Units-Third Generation (STU-III) and various communications nets.

MDS Software installation and site activation included on-site support with minimal operational training for the release of MDS version 3.0.8.2. Software distribution included the reproduction and packaging of all software media and supporting documentation, the generation of installation instructions, packaging, and shipping.

Since most of these sites were actively engaged in real-life operations, the seamless MDS hardware upgrade and software integration was a massive undertaking.

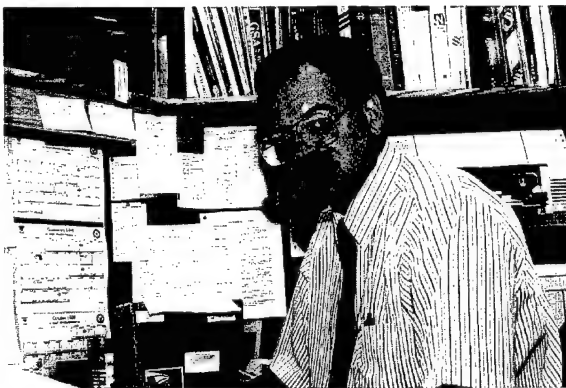
To date there are approximately fifty-five supported MDS site installations. On-site and telephonic support services were provided to virtually all MDS sites that have proven very successful in most instances. Response time to emergency on-site support requests is nominally twenty-four to forty-eight hours regardless of where in the world the request originates. Representatives are prepared to remain on-site until resolution is achieved. During FY98, SSC San Diego C4I Programs Office Philadelphia's representatives visited most out of the Continental United States (CONUS) sites at least once and some sites multiple times. Nearly all of the CONUS sites also received visits during FY98.

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SSC San Diego C4I Programs Office Philadelphia



*Stephen Kubicki Jr, Installation*



*Jim Kitts, Product Support*

## **RAPID DEPLOYMENT SUITE (RDS) Plant**

### **Role:**

- ➔ **Coordination of RDS Plant Engineering and Integration**
- ➔ **Installation Planning, Site Implementation, Suite Light-Off and Checkout**
- ➔ **Physical and Automated Information System (AIS) Accreditation**
- ➔ **Coordination and Security Guidance and Assistance**
- ➔ **On-Site Support and Upgrade Implementation**
- ➔ **Configuration and Uniformity Management**
- ➔ **Integrated Logistics Support**

The Rapid Deployment Suite (RDS) is comprised of Afloat Planning System (APS) and Joint Service Imagery Processing System-Navy (JSIPS-N) equipment housed in four standard mobile tactical shelters. Actual APS and JSIPS-N systems support is reported separately. The RDS is deployed as one complete, self-contained unit bringing the TOMAHAWK Land Attack Missile (TLAM) Tactical Mission Planning System (TMPS) capability to any Battle Force/Battle Group (BF/BG) Commander and theater of operations. All external communications connectivity and data transmission security safeguards are provided by host activity or site.

The RDS was developed to accommodate deployment in two operating arenas, both as a fully accredited stand-alone Sensitive Compartmented Information Facility (SCIF) and as a remotely located Tactical SCIF. Construction of the RDS incorporates physical as well as some Transient Electromagnetic Pulse Emanation Standard (TEMPEST) and Electromagnetic Interference (EMI) hardening to meet applicable requirements of the Director of Central Intelligence Directive (DCID) 1/21.

Raw data is introduced to the RDS primarily via magnetic media, photography and/or hard copy but may include an external communications link for National Imagery input. When the RDS is deployed to the Naval Strike and Air Warfare Center (NSAWC), Fallon, Nevada, an APS Operations Support Detachment (AOSD) or a Joint Mobile Operational Command Center (JMOCC), a fiber optic interface(s) may be installed connecting the RDS to the host facility. No communication transmitters or receivers other than Secure Telephone Unit - Third generation (STU-III) and cryptographic devices incorporated in the National Input Segment (NIS), which is part of JSIPS-N, are included in the present design.

In FY98, SSC San Diego C4I Programs Office Philadelphia's representatives supported RDS #1 installed at the AOSD Pacific, Commander-in-Chief, U.S. Pacific Fleet (CINCPACFLT), Pearl Harbor, Hawaii, by providing the improvement and repair of several environmental features. Most of these efforts were designed to make the prototype configuration of RDS #1 align with the production design of RDS #2 & #3. These actions included modifying the primary power circuits to include more safety features and various design alterations to improve habitability and integrity to the outside environment. The fourth shelter (Imagery) was installed which included JSIPS-N hardware installations of the National Input Segment (NIS) and the Precision Targeting Workstation (PTW) along with an upgrade of the TLAM Planning System Afloat (TPSA) to a TAC4. A Tape Copy System (TCS) was also added to the existing hardware suite.

Several site visits were made to AOSD Atlantic (RDS #2) at Commander-in-Chief, U.S. Atlantic Fleet (CINCLANTFLT), Norfolk, Virginia. Issues addressed and work preformed ranged from site hotel service

requirements, shelter door realignment and repairs, and extensive revamping of each shelter's air handling system to the replacement of all the Environmental Control Units (ECUs), and the upgrading the Intrusion Detection System (IDS) to match the existing station monitoring criteria. Additionally, pad modifications were made to accommodate the installation of the fourth shelter (Imagery) along with the JSIPS-N hardware (NIS and PTW) and to upgrade the TPSA to a TAC4. A Tape Copy System (TCS) was also added to this hardware suite.

Site visits were made to the NSAWC, Fallon, Nevada, (RDS #3) for installation of the JSIPS-N hardware (NIS and PTW) and for upgrade of the TPSA to a TAC4. Work accomplished included extensive revamping of each shelter's air handling system and the replacement of all the Environmental Control Units (ECUs). Additionally, site surveys were conducted to support the installation of the Tactical Input Segment (TIS), the Common High Bandwidth Data Link (CHBDL), and Image Product Library (IPL) scheduled for early in FY99 installation. Modifications to the Real Time Information to Cockpit (RTIC) shelters were completed in advance of this hardware installation for expedience.

Two site visits were conducted in support of APS / JSIPS-N at the Commander, U.S. Naval Forces Central Command, Forward (COMUSNAVCENT FWD), Manama, Bahrain. Originally planned for an RDS Sheltered Suite, this installation is now being completed as a shore based building installation. The visits included conducting an extensive site survey, participating in an American Service Unit (ASU), Resident Officer In Charge of Construction (ROICC) building pre-design conference, and providing a JSIPS-N communications and security requirements briefing. Because of the complexity of completing an out of the Continental United States (CONUS) installation of this magnitude, SSC San Diego C4I Programs Office Philadelphia hosted several coordination meetings in a effort to keep all those involved informed of plans and scheduling. All system hardware has been shipped and received on site, and the physical installation is in progress.

SSC San Diego C4I Programs Office Philadelphia's RDS tasking includes the coordination of multiple site visits to provide a direct conveyance of changing operational requirements, practices, thoughts and ideas between the program managers and RDS users. The intent of this requirement is for SSC San Diego C4I Programs Office Philadelphia to represent the Program Executive Office Cruise Missiles Project RDS Program Manager while visiting each RDS site several times a year. This representative needs the technical expertise and knowledge to be capable of addressing all issues encountered, and is usually accompanied by and leads a small support team comprised of personnel from various activities. In FY98, SSC San Diego C4I Programs Office Philadelphia coordinated two of these liaisons to each of the RDS installed sites. All exchanges were well received by the activities visited and have proven to be informative to all participants and the program office. As an outcrop of these visits, the need for improved documentation was revealed. SSC San Diego C4I Programs Office Philadelphia has initiated the complete rewriting of all supporting documents including improvement of all drawing packages.

Future activities include the continuation of site liaison, the installation at COMUSNAVCENT FWD, and continued life cycle support for all RDS Plants. This effort will also incorporate additional habitability modifications and will improve support documentation.

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SSC San Diego C4I Programs Office Philadelphia

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## Electronic Tomahawk Employment Planning Package (ETEPP)

### Role:

- ➔ **Hardware Engineering, Integration and Depot Support**
- ➔ **Software Reproduction and Distributions**
- ➔ **Integrated Logistics Support**
- ➔ **Continuous Trouble Desk Support**

The Electronic Tomahawk Employment Planning Package (ETEPP) provides database functions and other electronic tools to store, retrieve, and manipulate critical command and control information. Each Tomahawk mission carries certain essential defining criteria about its performance characteristics. ETEPP allows strike planners to assemble the key information and to adjust other external fire control factors to maximize the efforts of the battle group with respect to Tomahawk strike planning.

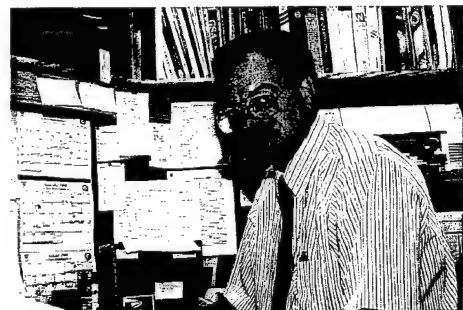
PMA-281 has tasked SSC San Diego C4I Programs Office Philadelphia to provide facilities and technical assets to receive, integrate, test, distribute, and maintain the ETEPP computer systems deployed throughout the fleet. SSC San Diego C4I Programs Office Philadelphia provides help desk support, supplies hardware repair and replacement services, and acts to resolve any problems the user may experience. Since 1993, the distribution list has grown to well over 250 systems. SSC San Diego C4I Programs Office Philadelphia provided resolutions to over 125 requests for technical assistance in the past year. These fleet issues are routinely worked with the coordinated assistance of various commanders: COMSUBLANT, COMSUBPAC, CINAVSURFLANT, COMNAVSURFPAC, CINCLANTFLT, and CINCPACFLT.

In FY98, SSC San Diego C4I Programs Office Philadelphia continued support of the ETEPP program by procuring, integrating and fielding fifteen new units while maintaining a store of ready spares and consumables. The challenge of supporting systems incorporating obsolete components proved to be a formidable task requiring extensive research to locate suppliers.

The ETEPP will continue to meet fleet requirements until the year 2000 when its software will become inoperative. The Advanced TOMAHAWK Weapons Control System (ATWCS) will incorporate this functionality and be available for use by then.

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*Stephen Kubicki Jr, Installation*



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## LOGISTICS PLANNING SUPPORT TO PMA-281

**Role:**

- **Hardware and Software Engineering**
- **Procurement Support**
- **Documentation**
- **Training**
- **Life Cycle Support**
- **Configuration Management**



Logistics planning for FY98 focused on support of the Tomahawk Mission Planning Center (TMPC), Afloat Planning System (APS), and Joint Imagery Processing System - Navy (JSIPS-N). Installations to many individual sites and upgrades to equipment were provided continuously throughout the year. These efforts were implemented by the engineering group. The follow-on support and continuing life cycle relationships among our sponsors, their systems, and users are the domain of the Product Support Division.

The staff of the logistics planning division was reorganized this year to keep pace with the rapidly changing field of logistics support. Commercial-Off-The-Shelf (COTS) hardware and software materials continue to change the face of the traditional military specification (MILSPEC) acquisition and procurement structure. SSC San Diego C4I Programs Office Philadelphia is developing new principles to improve training, documentation, and sparing of these COTS based systems.

One initiative that SSC San Diego C4I Programs Office Philadelphia has developed is the Logistics Support Terminal (LST). This COTS personal computer system acts to provide an integrated workspace for users of softcopy documentation and Computer Based Training (CBT). Various developers have contributed segmented deliveries. The LST provides a means to restore those segments into a desktop tool.

The Product Support industry is developing the Help Desk as a focal point for customer support. This is one example of keeping pace with commercial logistic practices that have been developed to support COTS. Working with a commercial call tracking software tool and Sybase System 11, we have structured the configuration management database into a normalized table of replacement parts. The individual Customer Service Representatives (CSR) use the lowest replacable unit (LRU) information system to quickly manage spare parts support requests. The Help Desk CSR also takes many calls that involve system diagnostics and troubleshooting.

Just as important as knowledge of the technology is knowledge of the contractual relationships among the sponsor, various equipment warranty providers, and system development engineering service providers. SSC San Diego C4I Programs Office Philadelphia has taken the approach that the warranty and Service Level Agreement (SLA) be tracked at the LRU level. This practice is consistent with the database rules in terms of the normalized LRU table. It is designed to assist the CSR to quickly resolve trouble calls and move the status accounting task to the Configuration Management (CM) System. Substantial effort has gone into packing and grooming the PMA-281 CM database system this year. We plan to begin to release pilot procedures and make use of an implementation Integrated Product Team (IPT) to ensure a smooth transition to the new CM Stat system in early 1999.

SSC San Diego C4I Programs Office Philadelphia has participated in several logistics certifications (Log-Certs) this year. They are part of every system installation. The Log-Cert involves working with the Combat Systems Material Officer (CSMO) and Supply Officer (SUPPO) to turn over the spare parts Pack-Up Kit (PUK), consumables and documentation. This is a way for the shipboard technician to learn more about how the In-Service Engineering Agency (ISEA) and its Help Desk can best work together. The Log-Certs provide a necessary networking arena; it is a time when email addresses, telephone numbers, procedures, and personal introductions are exchanged. When the ship comes back from deployment, the PUK is taken off the ship, restored, and delivered to the next deploying APS/JSIPS-N ship.

**Point of Contact:**

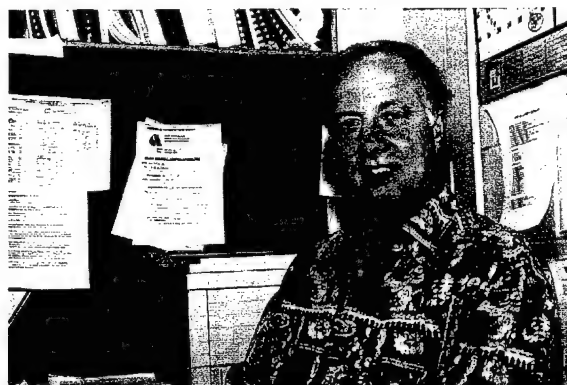
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SSC San Diego C4I Programs Office Philadelphia



*Jim Barnes and Dean Kralle,  
Product Support*



*Joe DiPardo, Product Support*



*Frank Davies, Product Support*



*Bohdan Sobkiw, Product Support*



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## WASHINGTON PLANNING CENTER

SSC San Diego C4I Programs Office Philadelphia was asked to move the electronics equipment for the Washington Planning Center (WPC). This relocation involved moving the majority of the contents of WPC's 6,000 square foot laboratory from Crystal City, Virginia, to the Washington Navy Yard. Subject equipment included all racks and desktop systems presently utilized by the Navy for TLAM mission planning, distribution, and support in addition to associated data storage devices, safes, work surfaces, and ancillary equipment. The move was scheduled to commence in July and be completed with a fully operational WPC by August 14, 1998.

SSC San Diego C4I Programs Office Philadelphia's review of the construction drawings revealed that 440-volt three phase power for Digital Imagery Work Station, Afloat (DIWS-A) equipment was lacking and that the circuits for the remaining laboratory equipment were not connected to the new power distribution units. SSC San Diego C4I Programs Office Philadelphia provided the equipment and information to install the 440-volt power and installed the circuits for the laboratory equipment in time for the physical move.

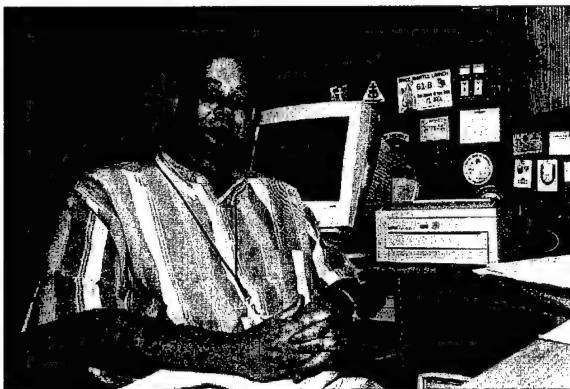
The project expanded again to include relocating DIWS-A equipment from Naval Surface Warfare Center Dahlgren Division (NSWC DD) to the new WPC lab. SSC San Diego C4I Programs Office Philadelphia arrived at Crystal City on July 6 to remove the equipment from NSWC DD and temporarily store it in Philadelphia. The 440-volt distribution was energized on July 30, and all the equipment and systems were delivered and reconnected. WPC held an open house on Wednesday, August 12, and was operating on schedule on Friday August 14, 1998.

### Point of Contact:

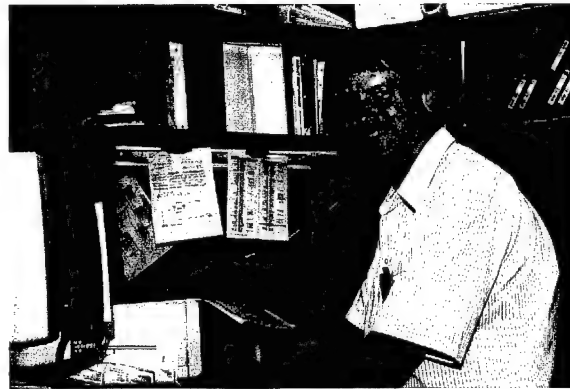
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SSC San Diego C4I Programs Office Philadelphia



*Ted Morrison, Installation*



*Jim Engelke, Installation*

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## TACTICAL AUTOMATED MISSION PLANNING SYSTEM (TAMPS)



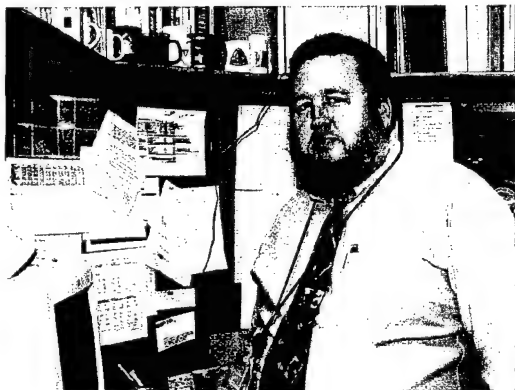
### Role:

- ➔ Systems Engineering
- ➔ Fleet Introduction and Installation
- ➔ Installation Planning
- ➔ Technical Support Help Desk
- ➔ Logistics Management
- ➔ Procurement Support

Tactical Automated Mission Planning System (TAMPS) is an interactive graphic system supporting aircrew mission planning for United States Navy and Marine Corps airborne weapon systems. TAMPS was first deployed in 1987 at the direction of the Secretary of the Navy. In 1991, TAMPS was established as a program in its own right and became PMA-233. The system is currently installed on board aircraft carriers, at shore bases, intelligence centers, weapons schools and aviation support facilities throughout the world.

In FY98, SSC San Diego C4I Programs Office Philadelphia continued to support TAMPS by providing engineering, installation, technical assistance, On-the-Job Training (OJT), on-call fleet support, logistics management, and procurement support for all hardware and software versions of TAMPS.

Three Fleet Installation Teams (FIT) began FY98 with the responsibility for performing TAMPS 6.1 hardware and/or software upgrades on thirteen aircraft carriers and over 200 ACE/VME TAMPS Portables deployed globally with Navy and Marine Corps squadrons. A team consists of one technician and one applications specialist. After these upgrades were successfully concluded in March 1998, a new hardware/software configuration was introduced to the fleet. The new hardware was the Sun Sparc Ultra2, hosting TAMPS 6.1.1, specifically for use on the Ultra2. The Ultra2 was the desktop mission planning workstation, which gradually



*Steve Fox, Head, Tactical Automated Mission Planning Systems Support Office*



*Karen Levine, Deputy*

replaced the ACE/VME. Thirty-three Ultra2s were delivered and installed for aviation squadrons and training sites. Training was also provided in the maintenance and use of the systems.

The next hardware/software change to be introduced was TAMPS 6.2. TAMPS 6.2 represents the new generation of TAMPS with long-awaited capabilities. The decision was made that its first fleet host would be *USS Theodore Roosevelt* (CVN-71). The TAMPS 6.2 concept aboard CV/CVNs involves a local area network (LAN) of the CVIC-based Sun E4000 TAMPS Server with as many as forty individual Ultra2 Desktop TAMPS in the squadron ready-rooms. The installation began in April 1998 and was successfully concluded in October 1998. All active CV/CVNs, Navy and Marine Corps squadrons and training sites will be converted to the TAMPS 6.2 or later configuration in the course of the next eighteen months.

The installation of the hardware and software is the framework of our TAMPS program; the training and logistic support is the muscle. SSC San Diego C4I Programs Office Philadelphia has put substantial muscle in the program this year. SSC San Diego C4I Programs Office Philadelphia has not only developed the required standard operational documents, but has also developed and distributed Getting Started Charts for each hardware version. SSC San Diego C4I Programs Office Philadelphia developed and distributed pocket checklist booklets for mission planners and the System Administrator/Data Base Administrator (SA/DBA) to provide operators with a quick, easy to use reference for equipment setup and operation.

All maintenance and user documentation was finalized and distributed for the TAMPS 6.1/6.1.1 versions. The TAMPS Performance Support Tools software was distributed to give the TAMPS mission planner or SA/DBA on-line manuals, lessons, tutorials, and procedures from a pull-down menu on the TAMPS system or on a personal computer. Getting Started Charts were created for the TAMPS 6.1.1 Desktop Portable (UltraSparc) to show the user how to set up a computer from the packing case to readiness for mission planning. TAMPS 6.1 Training Materials for Mission Planning and System Administration/Data Base Administration were updated to include TAMPS 6.1.1 and distributed to the schoolhouse.

A special edition of the TAMPS 6.1.1 training materials and user maintenance documentation was generated for the Foreign Military Sales (FMS) TAMPS destined for the French military. The initial training was conducted. User manuals were created for the asynchronous release of FA-18's 13C Mission Planning Module (MPM) for use with TAMPS 6.1.



*Dave Salmon, Installation*



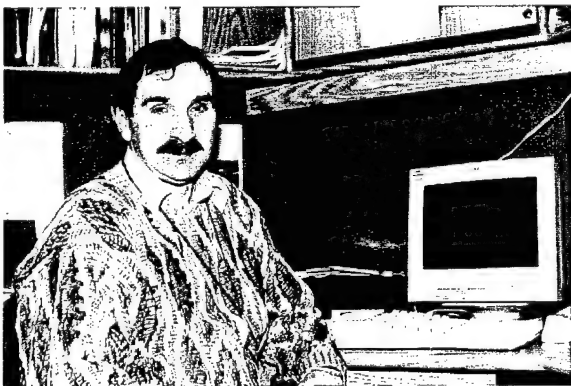
*Bob Grant, Fleet Liaison*

Maintenance manuals were created for the TAMPS 6.2 MPLAN Server hardware. The Desktop Portable Maintenance Documentation was revised to reflect the hardware upgrades already in progress. User documentation has been created for TAMPS 6.2 MPLAN 6.2K which will be finalized after completion of Operational Test (OT) in the first quarter FY99. Performance support tools for TAMPS 6.2/6.2K have been updated and expanded greatly. Training materials have been written for both the mission planner and system administrator. Instructor training for these courses will be held in the first quarter FY99. Training materials will then be finalized and distributed to the schoolhouses. Beginning with the TAMPS 6.2 version, SSC San Diego C4I Programs Office Philadelphia has been the central distribution point for all TAMPS user documentation, in contrast to each MPM distributing their own.

TAMPS 6.2 spares requirements have been determined and procured. On Board Repair Part (OBRP) Kits have been developed to support deployed systems. The Logistics Certification process has been established for TAMPS 6.2 installations to ensure delivery of all spare parts and documentation.

Navy Portable Flight Planning Software (N-PFPS) has completed two major software releases in FY98. N-PFPS 3.0 (the first Navy Release) was distributed early in the year. A User Logistic Support Summary (ULSS), a User's Manual, and other on-line documentation were developed. Flight Planning Modules (FPMs) were distributed as they were certified. N-PFPS Version 3.0.1 with a full complement of FPMs (fifty percent NATOPS certified) was distributed. COTS hardware was selected, procured, and integrated. Maintenance plans were defined. The hardware will be distributed in the first quarter of FY99.

Logistics support of the Tactical Strike Coordination Manager System was transitioned to SSC San Diego C4I Programs Office Philadelphia. Maintenance plans have been established. Training and documentation, as well as installation and fleet support, have been planned and implemented.



*Paul Steinbacher, Product Support*



*Judy Jolly, Product Support*

SSC San Diego C4I Programs Office Philadelphia Mission Planning System Help Desk continues to provide telephone support and visits to a multitude of sites worldwide, both ashore and afloat, to provide technical and repair assistance, training, software and hardware installation and crossdeck of systems between ships. The Help Desk proofreads new technical manuals and tests new versions of software. The Help Desk is preparing for TAMPS 6.2 to include configuration of Xylan switches and is becoming more LAN-oriented to improve support to the customer.



*Beth Ann Miles, Product Support*



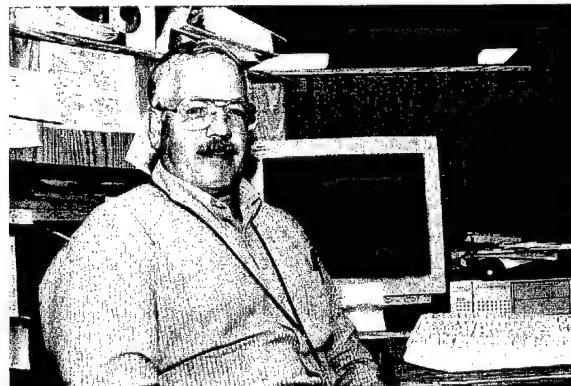
*Chuck Storicks, Product Support*



*Mary Williams, Product Support*



*Paul Meisinger, Engineering*



*Dennis Klinger, Engineering*

The SSC San Diego C4I Programs Office Philadelphia Systems Engineering Team supported the final development efforts for TAMPS 6.2. Engineering efforts included the selection, integration, testing, documentation, and implementation of the final Server, ATM network and workstation hardware suites. The shipboard rack configurations and CVIC hardware suites were designed and developed. TAMPS system loading and network performance were tested and evaluated utilizing the shipboard network and fleet representative hardware systems in the SSC San Diego C4I Programs Office Philadelphia laboratory. These engineering efforts also included:

- Coordinated/Implemented IT-21 requirements and guidelines into the TAMPS MPLAN Network Design.
- Designed and tested MPLAN Xylan switch configuration for the TAMPS 6.2 hardware system.
- Installed and evaluated TAMPS 6.2 at NSAWC, Fallon, Nevada, SSA, Pt. Mugu, California, and on board the *USS Theodore Roosevelt*.
- Designed, developed, and installed MPLAN fiber system on board the *USS Lincoln*, *USS Kitty Hawk*, *USS Enterprise*, *USS Theodore Roosevelt*, and *USS Constellation*.
- Coordinated TAMPS hardware/MPLAN installation schedule with AIRLANT and AIRPAC activities.
- Conducted studies, analyzed, tested, recommended improvements, upgraded, and extended capabilities for the TAMPS system and components, including: Xerox C55 color printer, SCSI expansion tower, FPPS computer and printer, monitor replacements, and related components.

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SSC San Diego C4I Programs Office Philadelphia



*Nhan Nguyen, Engineering*



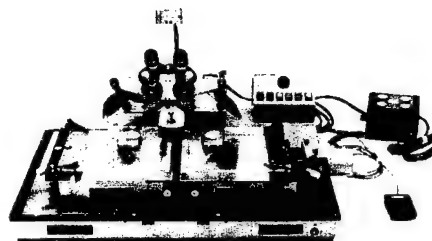
*Kevin O'Malley demonstrates Navy mission planning capabilities to Commander Hecker, Oreta Stinson, and Captain Moebius.*



## **ANALYTICAL PHOTOGRAMMETRIC POSITIONING SYSTEM (APPS)**

### **Role:**

- ➔ **Depot Maintenance**
- ➔ **Inter-Service Support**
- ➔ **Configuration Management**



The Analytical Photogrammetric Positioning System (APPS) is a stand-alone transportable light table and stereoscopic viewing system. The APPS utilizes prepared hard copy imagery and supporting Point Positioning Data Bases (PPDB) to provide precision mensuration data consisting of geographic position, datum conversions, distances, angular displacement, heights, and elevation from features shown on the imagery. The derived data are used for mission planning and targeting.

SSC San Diego C4I Programs Office Philadelphia is the APPS Depot Maintenance Interservice Agreement (DMISA) agent providing on-site and depot level service for approximately 56 units used by the USAF and the USN.

In FY98, the majority of the APPS service was provided to the USAF. On-site technical support was provided at thirteen USAF CONUS sites, seventeen USAF overseas sites, three USN aircraft carriers and two USN shore sites. Additionally, two USN aircraft carriers were visited for Casualty Report (CASREP) support while underway.

The DMISA contract was reviewed, and the terms and conditions were revalidated. During this process the USAF asked for testing, validation, and necessary corrective action for APPS functionality with the Y2K transition. The APPS DMISA contract will be continued until the transition to digital imagery and support data is complete.

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*Eddie Smith, Product Support*

## DIGITAL CAMERA RECEIVING STATION

### Role:

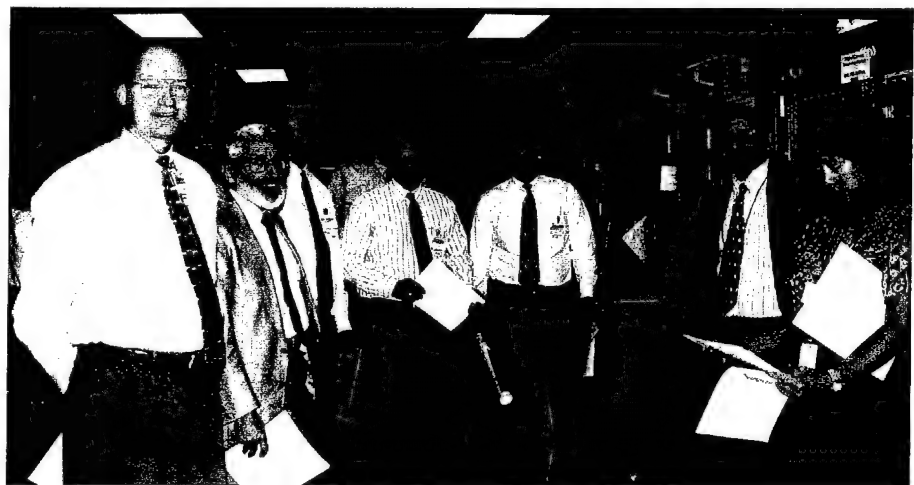
- ➔ System Design and Integration
- ➔ Hardware and Software Engineering
- ➔ Procurement Support
- ➔ Documentation
- ➔ Training
- ➔ Life Cycle Support
- ➔ Configuration Management



The Digital Camera Receiving Station (DCRS) provides a computerized digital photographic and imaging workstation under the Commercial-Off-The-Shelf Non-Development Item (COTS NDI) concept. This shipboard mounted workstation evolved from the Hand Held Digital Camera Reconnaissance System (HHDCRS), a portable system fielded for fleet evaluation in 1995. The DCRS is the receive element for the Tactical Aircraft Reconnaissance Pod System (Digital Imagery) (TARPS(DI)). As such, DCRS provides near real time digital imagery downlink capability of manned tactical reconnaissance from the F-14 aircraft. The DCRS also accepts digital photographic files and video inputs from all standard hand held digital cameras and videotape formats. DCRS capabilities include digital photographic manipulation, high resolution video digitizing, National Image Transmission Format (NITF) conversion, Microsoft Office, Message Text Format (MTF) editor, a shipboard radio communications interface, and a local area network (LAN) interface for imagery dissemination within the carrier based intelligence center (CVIC).

In FY96 and FY97, the Program Executive Office for Tactical Aircraft (PEO(T)) PMA-241 tasked SSC San Diego C4I Programs Office Philadelphia and the Naval Air Warfare Center - Aircraft Division, Indianapolis (NAWC-AD Indy) to design and incorporate a near real time digital imagery capability in the existing TARPS pods and associated F-14 aircraft. Working together as a team, SSC San Diego C4I Programs Office Philadelphia developed the shipboard receiving station, and NAWC-AD Indy developed the airborne image transmission capability.

SSC San Diego C4I Programs Office Philadelphia designed, integrated, and built the DCRS to include full logistic and documentation support. Functional requirements that resulted from the HHDCRS fleet evaluation were incorporated. Other design and integration efforts allow the DCRS to interface with existing cryptographic and



*Rod Smith, Dr. S. B. Schneiderman, Bill Bonwit, Fred Kramer, Dr. R. Jaffee and Miriam Glorioso observe as Tim Urbanski demonstrates DCRS capabilities.*



communications equipment aboard the aircraft carrier to enable the data communications to work effectively. By utilizing the Digital Photo Lab (DPL) architecture as a basis for the workstation, the time required for design, development and overall cost for logistics was reduced. SSC San Diego C4I Programs Office Philadelphia installed the first DCRS on board the *USS Theodore Roosevelt* (CVN-71) in September 1996 to support VF-32 during deployment. The DCRS performed as designed, and numerous missions were flown successfully. Based on these missions, the Chief of Naval Operations N88 identified this program as "urgent and compelling" and formalized it as a modification to operational requirement TW-30.

DCRS installations were completed on board six additional aircraft carriers and at two shore sites. Evaluation of the CVN-71 and VF-32 mission reports identified performance improvements to enhance the original DCRS hardware and software design. Video editing, frame digitizing and computer generated output were added to assist in the preparation of combat assessment videotapes. A transportable DCRS was developed and fielded for use in USMC Highly Mobile Multi-Wheeled Vehicles (HMMWV). In April 1997, CNO N88 hosted a TARPS(DI) and DCRS demonstration with several reconnaissance flights over the Pentagon. This demonstration was highly successful and resulted in the formal announcement of Initial Operational Capability (IOC) being reached for TARPS(DI) and DCRS.

During FY98, SSC San Diego C4I Programs Office Philadelphia performed five aircraft carrier DCRS installations, thus completing all active aircraft carriers. Design improvements were incorporated to accommodate new technology, the transition to compliance for the Year 2000 (Y2K), and the Information Technology for the 21st Century (IT-21) requirements. An interface was established with the Global Command and Control System – Maritime (GCCS-M) system to allow rapid movement of imagery to the JOTS14 workstation. IT-21 upgrades were installed in six aircraft carrier DCRS systems. The transportable DCRS design was modified for deployable squadron use, and a prototype was built. A new program effort allowing the transmission of imagery from the Low Altitude Navigation and Targeting Infrared for Night System-Forward Looking Infrared Imager (LANTIRN-FLIR) was initiated, and an engineering development model was designed.

SSC San Diego C4I Programs Office Philadelphia supported PEO(T) PMA-241 at System Architecture Requirement and System Architecture Working Group meetings for TARPS(DI) and DCRS imagery requirements for the Naval Strike Warfare Planning System. Fifty-one telephone assistance requests, twenty-two on site technical support requests, three Combat Systems Readiness Reviews (CSRR), two Combat System Pre-Acceptance Tests (CSPAT), and five Casualty Reports (CASREP) were resolved. SSC San Diego C4I Programs Office Philadelphia provides a full range of services including design, development, customization of hardware and software, system integration, installation, training, technical support, and life cycle management for the Digital Camera Receiving Station and airborne digital cameras and sensors.

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SSC San Diego C4I Programs Office Philadelphia



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## DIGITAL PHOTO LAB AN/UYQ-78(V)

**Role:**

- ➔ **System Design and Integration**
- ➔ **Hardware and Software Engineering**
- ➔ **Procurement Support**
- ➔ **Documentation Preparation**
- ➔ **System Training**
- ➔ **Life Cycle Support**
- ➔ **Configuration Management**

## DIGITAL PHOTO LAB



The Digital Photo Lab (DPL) AN/UYQ-78(V) program provides a computerized digital photography suite of equipment using the Commercial-Off-The-Shelf Non-Development Item (COTS NDI) concept. The DPL allows a full range of digital photographic processes and the interchange of digital photographic files with other shipboard and combat camera systems. This program offers the benefits of modern state-of-the-art computer technology which improves the way the U.S. Navy produces imagery by enhancing Visual Information, Public Affairs Office, Surface Surveillance Contact, and other photographic techniques. An additional benefit of this program is the reduction of shipboard photo chemical overboard discharge to assist in fleet compliance with Environmental Protection Agency regulations. Use of the DPL allows photo production to continue while in port, in non-discharge zones, or in remote locations that have limited fresh water. The DPL program is divided into distinct phases to allow a multi-level approach to the conversion of existing wet-chemical photo labs with the flexibility to provide different configurations of the DPL for various classes of U.S. Naval vessels.

Beginning in FY94 and continuing through FY97, SSC San Diego C4I Programs Office Philadelphia personnel designed the DPL system to be shipboard-mounted with full observance of human engineering factors, mechanical shock and vibration, electrical safety, and equipment protection while optimizing functionality and versatility. Working with NAVSEA PMS-312, the production version DPL AN/UYQ-78(V)1 was authorized for installation under SHIPALT 8424K (CV) and 8425K (CVN). DPL AN/UYQ-78(V)1 systems were installed on board all twelve active CV/CVN class aircraft carriers. Full logistic support was developed and provided. A collateral program included the design and fielding of the Hand Held Digital Camera Reconnaissance System (HHDCRS) for fleet evaluation within the F-14 A/B/D Tactical Aircraft.

An improved DPL Engineering Development Model (EDM) was developed to accommodate new technology, the transition to compliance for the Year 2000 (Y2K), and the Information Technology for the 21st Century (IT-21) requirements. As the DPL EDM system matured into the AN/UYQ-78(V)1B-1C-2A versions, NAVSEA PMS-377 authorized the DPL AN/UYQ-78(V)1C installation under SHIPALT 0253K (LHA) and SHIPALT 0691K (LHD). DPL AN/UYQ-78(V)1C systems were installed on board the *USS Boxer* (LHD-4) and *USS Bataan* (LHD-5). DPL AN/UYQ-78(V)2A was installed on board the *USS Harry S Truman* (CVN-75).

In FY98, SSC San Diego C4I Programs Office Philadelphia continued as the Cognizant Field Activity (CFA) and Life Cycle Manager (LCM) for DPL systems installed in the fleet. DPL AN/UYQ-78(V)1C was installed on board the *USS BonHomme Richard* (LHD-6). The DPL systems on board the *USS Kitty Hawk* (CV-63), the *USS Enterprise* (CVN-65), and the *USS Carl Vinson* (CVN-70) were upgraded to the DPL

AN/UYQ-78(V)1B. The DPL systems on board the *USS John F Kennedy* (CV-67) and *USS Dwight D Eisenhower* (CVN-69) were upgraded to the DPL AN/UYQ-78(V)2A.

SSC San Diego C4I Programs Office Philadelphia supported meetings with NAVSEA PMS-312 and PMS-377, PEO(T) PMA-241, and CNO N09C4 to provide design support for future DPL requirements. Eighty-seven telephone assistance requests, twenty-three on site technical support requests, three Combat Systems Readiness Reviews (CSRR), two Combat System Pre-Acceptance Tests (CSPAT), one Inspection and Survey (INSURV), and four Casualty Reports (CASREP) were handled. Operator and maintainer training curriculums were developed for implementation through the Chief of Naval Education and Training (CNET) schools.

SSC San Diego C4I Programs Office Philadelphia provides a complete range of services including design, development, customizing hardware and software, system integration, installation, training, technical support, and life cycle management for the Digital Photo Lab system, digital hand-held cameras and digital photographic production techniques.

**Point of Contact:**

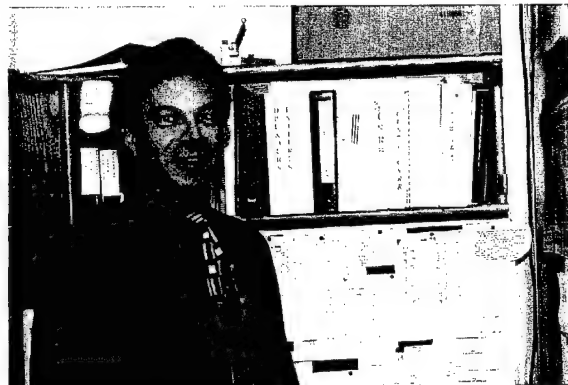
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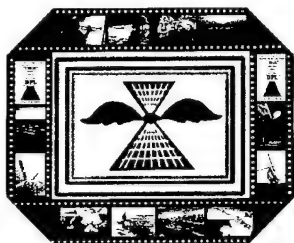


*Anthony Brancato, Engineering*



*Sue Patterson, Linda Modica, Fred Kramer, Dr. S. B. Schneiderman, Dr. R. Jaffee, Rod Smith and Bill Bonwit observe as Tim Urbanski demonstrates Digital Photo Lab capabilities.*

## FLEET PHOTO SUPPORT



### Role:

- ➔ **Engineering and Design Support**
- ➔ **Acquisition Support**
- ➔ **Integrated Logistics Support**
- ➔ **Fleet Support**

The Fleet Photo Support project provides support for conventional wet-chemistry photo labs on board US Naval vessels. SSC San Diego C4I Programs Office Philadelphia supports new construction and existing sites with engineering, design, acquisition, integrated logistics, and on-site technical support. During FY98, new ship construction support was provided to NAVSEA PMS-312 and NAVSEA PMS-377. Engineering and design meetings were attended to identify replacement items for obsolete legacy equipment. Acquisition of Schedule "A" equipment, logistic item development, installation, test and certification, and training services were provided to complete the photo labs on board the *USS Harry S Truman* (CVN-75) and the *USS BonHomme Richard* (LHD-6).

On site technical support was provided for EH-38D processors and other Tactical Air Reconnaissance Pod System (TARPS) film processing equipment on board twelve US Navy aircraft carriers. Design and engineering support was provided for the reconfiguration of the CVIC photo lab on board the *USS Nimitz* (CVN-68) to support the Naval Strike Warfare Planning Center. Two Combat Systems Readiness Reviews (CSRR), two Combat Systems Pre-Acceptance Tests (CSPAT), and one Inspection and Survey (INSURV) were performed.

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SSC San Diego C4I Programs Office Philadelphia



*Vincent DiCristofaro, Deputy and Engineering*



*Dennis Lloyd, Installation and Product Support*

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## IMAGE PRODUCT LIBRARY (IPL)

### ROLE:

- **Installation**
- **Customer Support**
- **Hardware Engineering**
- **System Acquisition**
- **System Assembly, Configuration, Integration, Installation**
- **Logistics Support**
- **Training**
- **Configuration Management**
- **Life Cycle Support**



The Image Product Archive/Image Product Library (IPA/IPL) program is a DoD initiative sponsored by the National Imagery and Mapping Agency (NIMA) to develop the standard United States Imagery System (USIS) product archives system. This system is part of NIMA's Pilot Accelerated Architecture Acquisition Initiative (A3I) for enhanced digital imagery request, distribution, and management for all echelons within the National and DoD IMINT community. The objective of the Pilot A3I is to quickly transition enhanced capabilities to the field that will form the basis for the USIS architecture of the future.

The IPL provides the capability to provide image products to intelligence analyst users and non-intelligence users from assets at selected IMINT production centers. The IPL provides browser capability to query image product holdings at the IMINT production center and/or other IPLs to determine what image products are available to satisfy the user's needs. The users may then select an image product, indicate transfer parameters (which influence image product format and compression ratio), and request transfer of the product. The IPL browser workstation then receives the image product and notifies the user that the image product is available. The IPL also provides the capability to receive image products in either National Imagery Transmission Format (NITF) format or selected non-NITF formats and enter them in the Image Product Database. The IPL Manager has functions available for database maintenance and management.

IPL provides the imagery community with improved accessibility, operational support, and distribution of geospatial and imagery products. To achieve this mission, IPL provides an automated capability to support the following activities:

- Query image product holdings from multiple sources,
- Receive imagery and/or image products from multiple sources,
- Maintain a database of imagery and/or image products,
- Transfer imagery and/or image products to imagery clients from imagery sources,
- Transfer imagery and/or image products to remote locations using several formats and compression ratios.

IPL provides the server software necessary to implement the IPL mission. It supports client searches/requests for applicable imagery and image products, and provides information on the status of request/transfers. It interfaces with other imagery sources (IESS, 5D, etc.) to enable the client to conduct queries of imagery holdings and requests, and subsequently receive the imagery.

SSC San Diego C4I Programs Office Philadelphia's involvement in the IPL program began in January 1997 with the receipt of our initial funding from the NIMA program office. During FY98, SSC San Diego C4I Programs Office Philadelphia received continued tasking to execute the efforts necessary to initiate and maintain IPL in the field.

SSC San Diego C4I Programs Office Philadelphia provided Site Introduction Teams to install the IPL 1.0 software at sites located in both CONUS and abroad. These teams performed site surveys, delivered and installed Sybase database management software and IPL software on site equipment, maintained licensing tracking, configured site systems to support specialized end user requirements, and migrated site imagery databases to the IPL environment. Site Introduction Teams also provided on-the-job training for IPL operators, delivered supporting documentation required by the site for IPL use/support, reported observed IPL and/or site problems and discrepancies, and reproduced deliverable software from master electronic media. In addition, the teams provided technical support to sites and the help desk, supported site security certification, and provided shipboard installation planning and coordination. During FY98, the Site Introduction Teams performed seventy IPL 1.0 on-site system installations at thirty-six separate site locations. The teams also provided site acceptance tests, training, and support.

SSC San Diego C4I Programs Office Philadelphia provided Customer Support Services for IPA/IPL systems. Our Customer Support Team maintained a toll-free international access number for customer support, logged and tracked all requests for support, submitted formal trouble reports, as required, and provided 24-hour, 7-day per week staffed support. The team troubleshooted and resolved technical problems, monitored results and ensured that problems were accurately tracked to resolution, and analyzed the nature of problems and reported trends. During FY98, SSC San Diego C4I Programs Office Philadelphia received and resolved ninety-three trouble calls. The average time to close a trouble call was 3.5 hours.

Our Hardware/COTS Software Engineering Team provided hardware-engineering support to the IPL program during 1998. This effort included hardware definition, COTS software definition, requirements definition, installation guidance package planning, site checks, and system installation parameter definition. Along with the support of our resource management personnel, this team provided procurement support to the sponsor for the acquisition of hardware and COTS software and licenses for the IPL program. This effort performed the tasks necessary to cost, purchase, track, and warehouse the Non Development Item (NDI) system components identified by the IPL program. Our team also performed hardware assembly, configuration, and integration, system and program software installation, software/hardware integration, IPL system testing prior to field introduction, equipment receipt, inventory, storage, packaging for shipment, and shipping to the site.



During FY98, we procured twenty-one complete IPL systems comprised of seventeen medium configurations (Sun E3000/4000) and four small configurations (Sun Ultra 2). We placed a total of 150 procurement actions in support of IPL programs. During the year, we also assembled, configured, integrated, shipped and installed fifty-eight systems from FY97 and FY98 procurements.

SSC San Diego C4I Programs Office Philadelphia provided Logistics Support for IPL including documentation generation and assessment (logistics planning, training, certification, testing, user documents), and sparing assessment for hardware acquisitions. The Logistics Team developed IPL training including: developing curriculum and training materials, acquiring necessary training systems, setting-up classroom facilities, scheduling courses, training the trainers, and developing training scenarios. We developed database elements, baselined training hardware and databases, provided training, provided follow-up, and upgraded the training for the new IPL release. The Logistics Team also supported System Configuration Management and Tracking by providing hardware and software status accounting of user sites, and inventorying and tracking IPL hardware and software acquisitions in the CM database.

During FY98, SSC San Diego C4I Programs Office Philadelphia provided training to 210 students in IPL 1.0 operations during 22 training classes offered in Philadelphia and on-site at US STRATCOM and Fort Hood, Texas.

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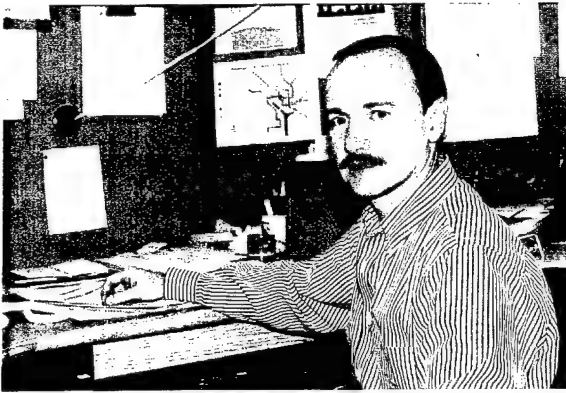


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*Frank Greco, Deputy and Installation*

## IPL Support Staff



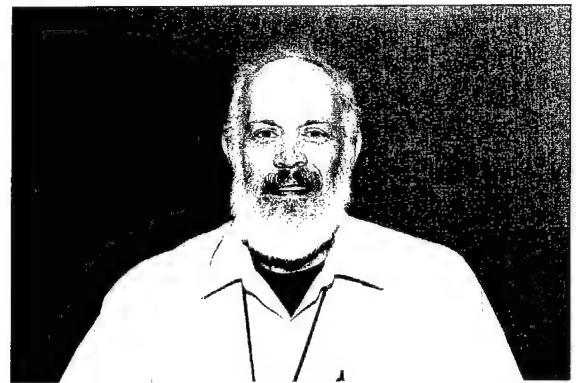
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## **Joint Services Imagery Processing System – Navy (JSIPS-N) Concentrator Architecture (JCA)**

### **Role:**

- ➔ **Procure JCA Commercial Hardware and Software for Established Requirements**
  - ➔ **Purchase Hardware and Software**
  - ➔ **Monitor and Track Procurements**
  - ➔ **Receive/inventory**
  - ➔ **Deliver to End Site**
- ➔ **Install Image Product Library (IPL) Shipboard and Land Sites**
- ➔ **Incorporate JCA Elements into JSIPS-N Logistics Support**

The JCA is comprised of a Navy controlled clearinghouse to receive and disseminate imagery and operational Navy sites that will use the imagery received via the JCA. It will include all operational naval units and shore sites that are considered capable of operating within the JSIPS-N program as well a primary Concentrator located at the Office of Naval Intelligence and a backup Concentrator at the Washington Planning Center. Ships and shore activities that rely on the use of imagery and imagery products to conduct their missions comprise the users of the JCA. The JCA will also have an overall effect on the tactical operational community members that are involved in strike planning. The JCA is designed to evolve along with the rest of the imagery community into the US Imagery and Geospatial Information System (USIGS) architecture that will benefit from the use of common client systems to access imagery and imagery products.

The JCA consists of four system components including the Sources, the Concentrator, the Sites, and the Communications between the other three components. The Sources include the Enhanced Processing Segment (EPS) and theater, tactical and other commercial and government imagery and imagery product sources. The Concentrator is essentially the gateway between the sites and the sources, where data is collected and/or generated, stored and retrieved by profile or request, and disseminated electronically. The Sites include ships with bandwidth allocated for imagery dissemination, Rapid Deployment Suites (RDS) and other potential shore sites such as the Washington Planning Center (WPC), the Naval Strike and Air Warfare Center (NSAWC), and the Naval and Marine Corps Intelligence Training Center (NMITC).

The JCA was designed to provide a reliable system to support several user requirements. It will provide a centralized storage archive of imagery and imagery products in a common format. The JCA will support, at a minimum, the present National Input Segment (NIS) capabilities in existence for national imagery to include the national imagery dissemination timeline requirements. The JCA will be automated whenever possible to provide electronic transfer of data to other systems and sites and better communications utilization. The JCA will provide all deploying units a capability to access near-real time imagery and products as well as geospatial products and to plan missions successfully and support intelligence using mission essential imagery.

SSC San Diego C4I Programs Office Philadelphia's involvement in the JCA program began in third quarter FY98 with the receipt of initial funding from the PMA-281 program office. Our primary role in support of the JCA is the procurement of the JCA commercial hardware and software based on the requirements established by the system's architect. This includes ordering the hardware and software, monitoring and tracking the status for all procurements, receipt and inventory of all components ordered for the JCA, and delivery to end site for

installation. In addition to our acquisition role, we also support the JCA with the installation of the Image Product Library (IPL) at the primary and backup Concentrator sites as well as at operational user sites including ships and shore based sites. The logistics support for the JCA will be incorporated into the JSIPS-N logistics support architecture managed under the Cruise Missile Program Office.

During FY98, all of the major requirements for the primary Concentrator were identified and ordered. Our JCA acquisition team executed a total of forty different acquisition actions during FY98 to cover this multi-million dollar effort.

SSC San Diego C4I Programs Office Philadelphia also supported the JCA with system engineering for the IPL systems for both afloat and ashore sites. We performed hardware acquisition and integration, software installation, site delivery and installation support, and on-site training. During FY98, we delivered shipboard configured systems to both the WPC and NSAWC with IPL 1.0 software. We prepared the Office of Naval Intelligence (ONI) system and the *USS Coronado* (AGF-11) IPL for installation in October with IPL 1.0 software.

Logistics support for JCA is being developed in accordance with the JCA Concept of Operations. During FY98, the process of incorporating the JCA into the overall JSIPS-N logistics program was begun. JCA Customer Support is being included as part of the JSIPS-N Help Desk 7x24 "one stop" ashore and afloat support. The JCA afloat maintenance is being integrated with the JSIPS-N sparing philosophy under FedEx premium service. Ashore maintenance is covered by three-year extended vendor warranties purchased as part of the initial acquisition packages during FY98.

Configuration management tracking of hardware components is being incorporated under the CM Stat system. All JCA acquisitions received during FY98 have been inventoried as part of this tracking system. Training for JCA is being integrated as a block into Dissemination Manager's training. Documentation for JCA is being incorporated into the logistics certification process for JSIPS-N and integrated into the streamlined documentation approach for afloat systems.

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## GLOSSARY OF ACRONYMS

AIS	Automated Information Systems
AOSD	APS Operations Support Detachment
APPS	Analytical Photogrammetric Positioning System
APS	Afloat Planning System
APS/RDS	Afloat Planning System/Rapid Deployment Suite
ASU	American Service Unit
BPA	Basic Purchasing Agreement
BF	Battle Force
BG	Battle Group
C4I	Command, Control, Communications, Computers, and Intelligence
CASREP	Casualty Report
CBT	Computer Based Training
CFA	Cognizant Field Activity
CHBDL	Common High Bandwidth Data Link
CINCLANTFLT	Commander In Chief, Atlantic Fleet
CINCPACFLT	Commander In Chief, Pacific Fleet
CM	Configuration Management
CMSALANT	Cruise Missile Support Activity, Atlantic
CMSAPAC	Cruise Missile Support Activity, Pacific
CNET	Chief of Naval Education and Training
COMNAVAIRLANT	Commander, Naval Air Force, Atlantic Fleet
COMNAVAIRPAC	Commander, Naval Air Force, Pacific Fleet
COMNAVSURFLANT	Commander, Naval Surface Force, Atlantic Fleet
COMNAVSURFPAC	Commander, Naval Surface Force, Pacific Fleet
COMSUBLANT	Commander, Submarine Force, Atlantic Fleet
COMSUBPAC	Commander, Submarine Force, Pacific Fleet
COMUSNAVCENT	Commander, U.S. Naval Forces Central Command, Forward, Manama, Bahrain
CONUS	Continental United States
COR	Contracting Officer's Representative
COTS	Commercial Off-the-Shelf
COTS NDI	Commercial Off-the-Shelf Non Development Item
CRLCMP	Computer Resources Life Cycle Management Plan
CSMO	Combat Systems Materials Officer
CSPAT	Combat System Pre-Acceptance Test
CSR	Customer Service Representative
CSRR	Combat Systems Readiness Review
CV	Aircraft Carrier
CVIC	Carrier Intelligence Center
CVN	Aircraft Carrier Nuclear
DBA	Data Base Administrator
DCID	Director of Central Intelligence Directive
DCRS	Digital Camera Receiving Station
DIA	Defense Intelligence Agency
DISC	Defense Industrial Support Center
DIWS-A	Digital Imagery Work Station, Afloat
DLA	Defense Logistics Agency
DMISA	Depot Maintenance Inter-Service Agreement

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DOD	Department of Defense
DPL	Digital Photo Lab
ECP	Engineering Change Proposal
ECU	Environmental Control Unit
EDM	Engineering Development Model
EMI	Electromagnetic Interference
ESC	Electronic Systems Command
ETEPP	Electronic Tomahawk Employment Planning Package
FedEx	Federal Express
FISC	Fleet and Industrial Supply Center
FIT	Fleet Installation Team
FPM	Flight Planning Module
FY	Fiscal Year
GCCS-M	Global Command and Control System – Maritime
GENSER	General Service
GFCP	Generic Front-end Communications Processor
GLCM	Ground Launch Cruise Missile
HCI	Human Computer Interface
HHDCRS	Hand Held Digital Camera Receiving System
HMMWV	Highly Mobile Multi-Wheeled Vehicle
ICD	Installation Control Drawings
IDIQ	Indefinite Delivery / Indefinite Quantity
IDS	Intrusion Detection System
IOC	Initial Operational Capability
IMINT	Imagery Intelligence
IMPAC	International Merchant Purchase Authorization Card
INSURV	Inspection and Survey
IPA	Image Product Archive
IPL	Image Product Library
IPR	In-Progress Review
IPT	Integrated Product Team
ISEA	In-Service Engineering Agency
IT-21	Information Technology for the 21st Century
JCA	JSIPS-N Concentrator Architecture
JMCIS	Joint Maritime Command Information System
JMOCC	Joint Maritime Operational Command Center
JOTS	Joint Operational Tactical System
JSIPS-N	Joint Service Imagery Processing System - Navy
LAN	Local Area Network
LCM	Life Cycle Manager
LST	Logistics Support Terminal
MDS	Mission Distribution System
MDU	Mission Data Update
MILSPEC	Military Specification
MILSTRIP	Military Standard Requisition and Issue Procedures
MML	Master Mission Library

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MOA	Memorandum of Agreement
MPM	Mission Planning Module
NAVICP	Naval Inventory Control Point
NAWC-AD	Naval Air Warfare Center – Aircraft Division
NIMA	National Imagery and Mapping Agency
NIS (DE)	National Input Segment, Dissemination Element
NIS (RE)	National Input Segment, Receive Element
NITF	National Imagery Transmission Format
NMITC	Naval and Marine Corps Intelligence Training Center
N-PFPS	Naval Portable Flight Planning Software
NSAWC	Naval Strike and Air Warfare Center
NSWC	Naval Surface Warfare Center
O&M	Operations and Maintenance
OBRP	On Board Repair Part
OJT	On-the-Job Training
OLPST	On Line Performance Support Tools
OT	Operational Test
PEO(CU)	Program Executive Officer for Cruise Missiles Project and Unmanned Aerial Vehicles
PEO(T)	Program Executive Officer for Tactical Aircraft
PMA	Program Manager Air
PMR	Program Management Review
PPDB	Point Positioning Data Base
PPM	PrePlanned Missions
PTD	Provisioning Technical Documentation
PTW	Precision Targeting Workstation
PUK	Pack-Up Kit
RDS	Rapid Deployment Suite
ROICC	Resident Officer in Charge of Construction
RTIC	Real Time Information to Cockpit
SA	System Administrator
SAP	Special Access Program
SCIF	Sensitive Compartmented Information Facility
SDX	Secure Data Transfer
SID	Ships Installation Drawing
SLA	Service Level Agreement
SOM	System Operator's Manual
SOVT	System Operational Verification Test
SSC	SPAWAR Systems Center
STRH	System Technical Reference Handbook
STU-III	Secure Telephone Unit - Third Generation
SUPPO	Supply Officer
TACTRAGRULANT	Tactical Training Group, Atlantic
TACTRAGRUPAC	Tactical Training Group, Pacific
TAMPS	Tactical Aircraft Mission Planning System
TARPS	Tactical Air Reconnaissance Pod System
TCS	Tape Copy System

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TEMPEST	Transient Electromagnetic Pulse Emanation Standard
TIS	Tactical Input Segment
TLAM	Tomahawk Land Attack Missile
TMPC	Tomahawk Mission Planning Center
TMPS	Tactical Mission Planning System
TOA	Total Obligating Authority
TPSA	Tomahawk Planning System Afloat
TSCM	Tomahawk Strike Coordination Module
ULSS	User Logistic Support Summary
USAF	United States Air Force
USCINCPAC CMDCTR	U.S. Commander-in-Chief, Pacific Command Center
USIS	U.S. Imagery System
USMC	United States Marine Corps
USN	United States Navy
WPC	Washington Planning Center
Y2K	Year 2000

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